## ABSTRACT

A system for optical communication send optical signals over a plurality of wavelength channels. Each wavelength channel comprises a number of orthogonal subchannel frequencies which are spaced apart from one another by a predetermined amount. Each of the subchannel frequencies is modulated with data from a data stream. The data modulation scheme splits a subchannel frequency code into H and V components, and further processes the components prior to modulation with data. The various data-modulated subchannels are then combined into a single channel for transmission. The received signals are detected and demodulated with the help of a symbol timing recovery module which establishes the beginning and end of each symbol. A polarization mode distortion compensation module at the receiver is used to mitigate the effects to polarization more distortion in the fiber.